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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/087,494	02/28/2002	Carol L. Colrain	50277-1959	3035

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EXAMINER

LE, DEBBIE M

ART UNIT PAPER NUMBER

2167

DATE MAILED: 09/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/087,494

Applicant(s)

COLRAIN ET AL.

Examiner

DEBBIE M. LE

Art Unit

2167

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 6/24/8/22/9/1/05.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Information Disclosure Statement***

The information disclosure statement (IDS) submitted on 6/24/05 8/22/05 and 9/1/05 have been considered by the examiner. See attached PTO-1449.

### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-12 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The language of the claim raise a question as to whether the claim is directed merely to an abstract idea that is not tied to a technological art, environment or machine which would result in a practical application producing a concrete, useful, and tangible result to form the basic of statutory subject matter under 35 U.S.C. 101.

To expedite a complete examination of the instant application the claims rejected under 35 U.S.C 101 (nonstatutory) above are further rejected as set forth below in anticipation of applicant amending these claims to place them within the four categories.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huras et al (US Patent 6,807,540 B2) in view of Agesen et al (US Patent 6,314,563 B1).

As per claim 1, Huras discloses **a system for detecting termination of an application instance using locks** (as a deadlock detector identifies a deadlock application holding a lock on the database system) (see abstract), **comprising:**

**a holding process configured** (as an application 10 holding lock 20) (Fig. 1, # 10 and #20, see col. 5, line 19) **to obtain a first locks on an object maintained by the application instance** (as application 12 and 14 requests lock 20, such that in the database system, it is common provides locks on portions of the data, such as lock on a table) (see Fig. 1, # 12, #14, and #20, col. 5, lines 7-8, 23-24); **and**

**a waiting process (as the lock is waiting) (see col. 5, line 47) configured to (a) request a second lock on the object after the holding process has been granted the first lock on the object** (as when an application control 10 becomes disassociated from a work agent 16 (waiting process), but application 10 (holding process) maintains a lock on data, the application is marked with flag W (see col. 6, lines 6-11), when an application requests is granted a lock, a lock wait graph is updated to show the application and the lock, the deadlock detector which accesses resource representation and the lock wait graph to carry out deadlock detection) (see col. 5, lines 41-46, **and (b) return a result signal, to a monitor process, upon at least one of acquiring the second lock and ceasing to be blocked** (as deadlock detector (monitor process) polls and application control having a flag W (result signal) and determines that the application holds a lock that is required by another application, the first application is marked with flag H) (see col. 6, lines 12-16); **and**

**the monitor parent process configured to process processing the result signal to determine whether the application instance has terminated** (as deadlock detector will determine from lock wait graph whether the application hold a lock required by another application, if this condition is found, deadlock detector declares a deadlock) (see col. 6, lines 42-48).

**Huras** does not explicitly teach exclusive lock on an object. However, **Agesen** teaches exclusive lock (see col. 4, lines 20-21). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references to allow an exclusive lock on the object as disclosed

by Agesen so that no other thread can execute (i.e., transfer internal transfers back and forth between two of a bank's account, while the total method is intended to print out the total of the bank's account balances) a synchronized method on that object until the first thread releases its locks in order to secure the data consistency in the database, as suggested by Agesen (col. 3, lines 62-67, col. 4, lines 1-13).

As per claim 2, Huras teaches the monitor process determining whether the application instance terminated based, at least in part, on whether the monitor process receives a standard error or a non-standard error received from the waiting process (col. 6, lines 46-48).

As per claim 3, Huras teaches wherein the holding process resides at the same node as the application instance (Fig. 1, application 10, lock 20), and where the waiting process does not reside at the same node as the application instance (Fig. 1, application 12 or 14) .

As per claim 4, a validation module configured to (a) check for termination of the monitored application and (b) signal termination of the monitored application to a cluster service (Fig. 2, # 40).

As per claim 5, a validation module configured to (a) check for termination of the monitored application and (b) restart the holding process and the waiting process (col. 5, lines 37-41).

As per claim 6, wherein the application instance is a database service instance (col. 5, lines 7-12).

**As per claim 7, Huras discloses a method for detecting termination of an application instance using locks** (as a deadlock detector identifies a deadlock application holding a lock on the database system) (see abstract), **comprising:**

**starting a holding process configured to perform the step of** (as an application 10 holding lock 20) (Fig. 1, # 10 and #20, see col. 5, line 19):

**(a) acquiring a first lock on an object maintained by the application instance** (as application 12 and 14 requests lock 20, such that in the database system, it is common provides locks on portions of the data, such as lock on a table) (see Fig. 1, # 12, #14, and #20, col. 5, lines 7-8, 23-24), **and**

**(b) returning a ready signal, to a monitor process, upon successfully acquiring the first exclusive lock** (as when an application requests is granted a lock, a lock wait graph is updated to show the application and the lock, the deadlock detector which accesses resource representation and the lock wait graph to carry out deadlock detection) (see col. 5, lines 41-46); **and**

**in response to receiving the ready signal, starting a waiting process configured to perform the steps of:** (as the lock is waiting) (see col. 5, line 47)

**connecting to the monitored application instance, (b) requesting a second lock on the object maintained by the application instance** (as when an application control 10 becomes disassociated from a work agent 16 (waiting process), but application 10 (holding process) maintains a lock on data, the application is marked with flag W (see col. 6, lines 6-11); **and**

**(c) returning, to the monitor process, a result signal upon at least one of one of acquiring the second lock and ceasing to be blocked** (as deadlock detector (monitor process) polls and application control having a flag W (result signal) and determines that the application holds a lock that is required by another application, the first application is marked with flag H) (see col. 6, lines 12-16);

**processing the result signal, at the monitor process, to determine whether the application instance has terminated** (as deadlock detector will determine from lock wait graph whether the application hold a lock required by another application, if this condition is found, deadlock detector declares a deadlock) (see col. 6, lines 42-48).

**Huras** does not explicitly teach exclusive lock on an object. However, **Agesen** teaches exclusive lock (see col. 4, lines 20-21). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references to allow an exclusive lock on the object as disclosed by Agesen so that no other thread can execute (i.e., transfer internal transfers back and forth between two of a bank's account, while the total method is intended to print out the total of the bank's account balances) a synchronized method on that object until the first thread releases its locks in order to secure the data consistency in the database, as suggested by Agesen (col. 3, lines 62-67, col. 4, lines 1-13).

Claims 8-12 have similar limitations as claims 2-6; therefore, they are rejected under the same subject matter.

Claim 13 is rejected under the same rationale as state in independent claim 7 arguments.



***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DEBBIE M. LE whose telephone number is (571) 272-4111. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JOHN BREENE can be reached on (571) 272-4107. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



DEBBIE M LE  
Examiner  
Art Unit 2167

Debbie Le

September 16, 2005.